OIPE IAP25
OCT 07 2005
PATENT & TRADEMARK OFFICE

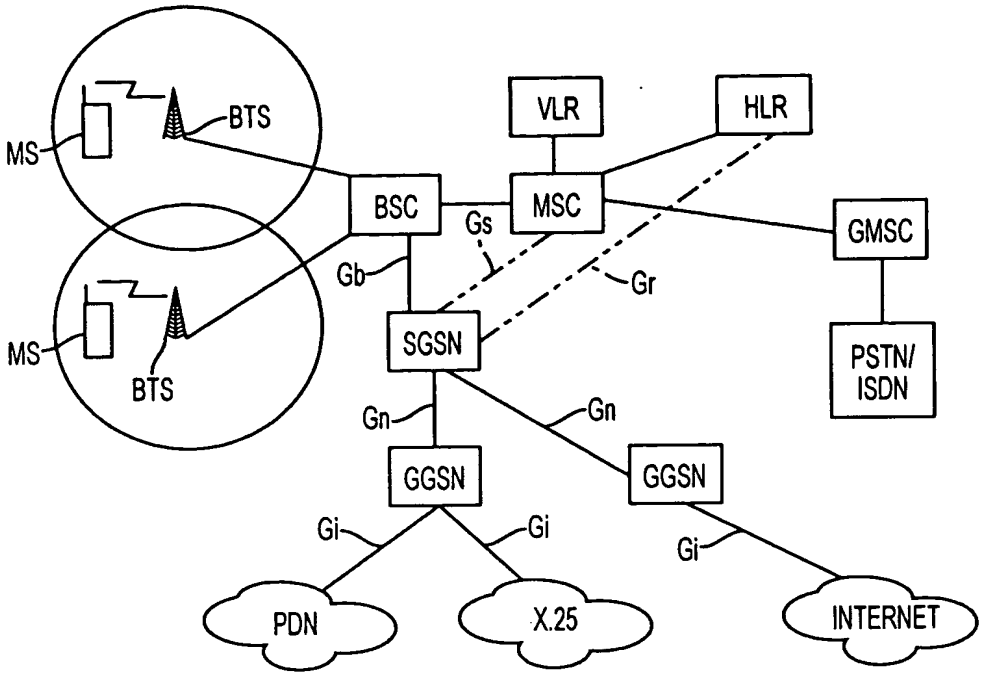

FIG. 1

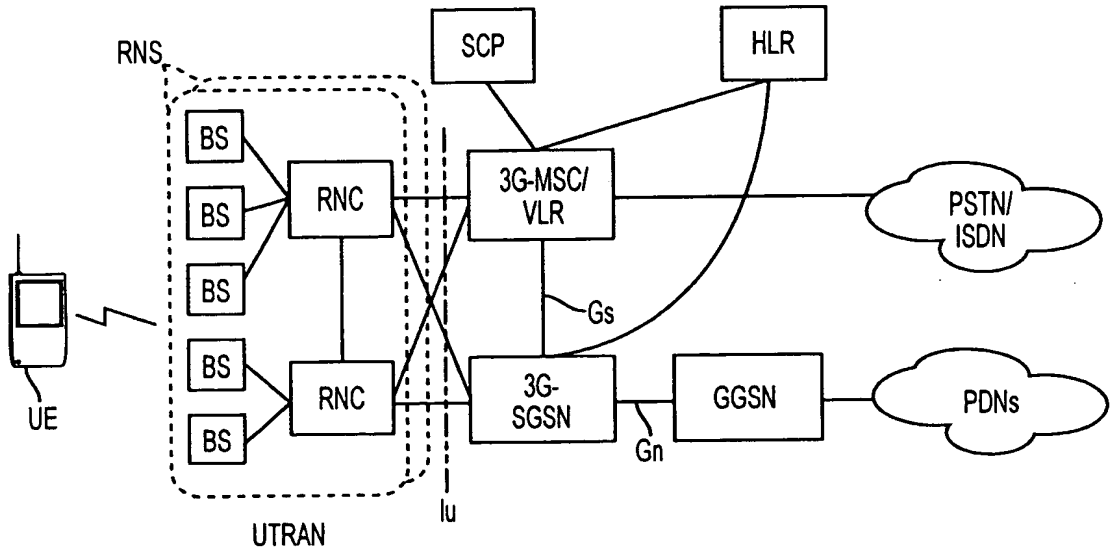

FIG. 2

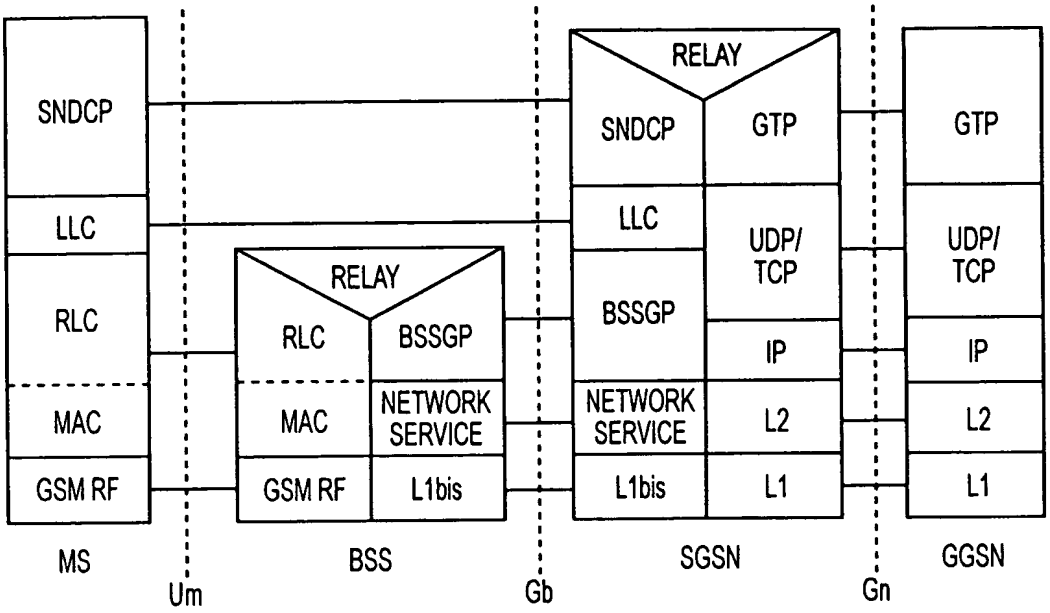
SNDCP
LLC
RLC
MAC
GSM RF
RELAY
RLC
BSSGP
MAC
NETWORK SERVICE
GSM RF
L1bis
RELAY
SNDCP
GTP
LLC
BSSGP
NETWORK SERVICE
L1bis
UDP/ TCP
IP
L2
L1
GTP
UDP/ TCP
IP
L2
L1
MS
Um
BSS
Gb
SGSN
Gn
GGSN

FIG. 3A

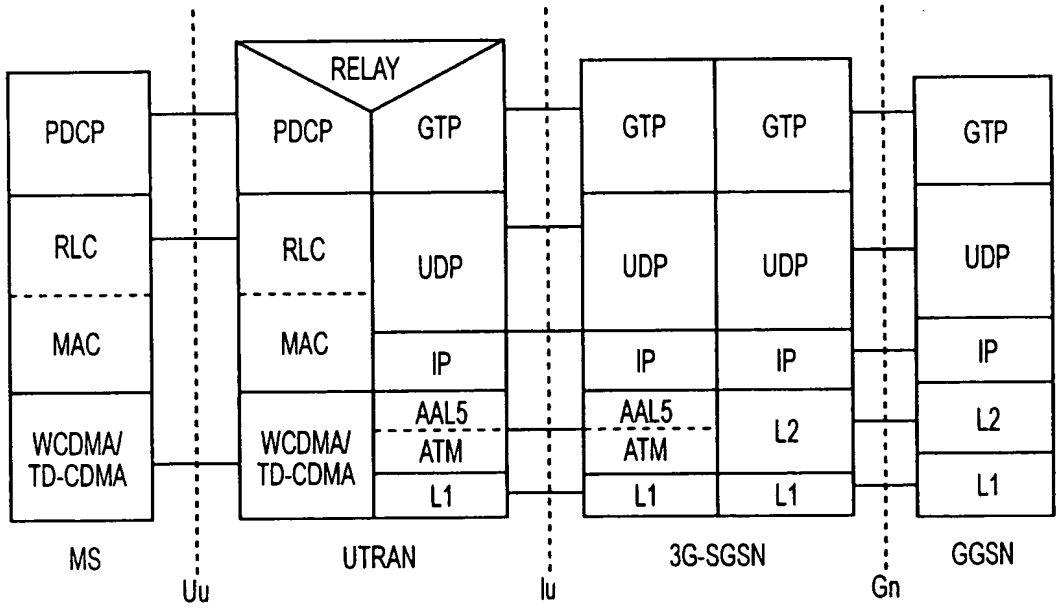
PDCP
RLC
MAC
WCDMA/ TD-CDMA
RELAY
PDCP
GTP
RLC
MAC
WCDMA/ TD-CDMA
UDP
IP
AAL5
ATM
L1
GTP
GTP
UDP
UDP
IP
IP
AAL5
ATM
L1
L1
GTP
UDP
IP
L2
L1
MS
Uu
UTRAN
Iu
3G-SGSN
Gn
GGSN

FIG. 3B

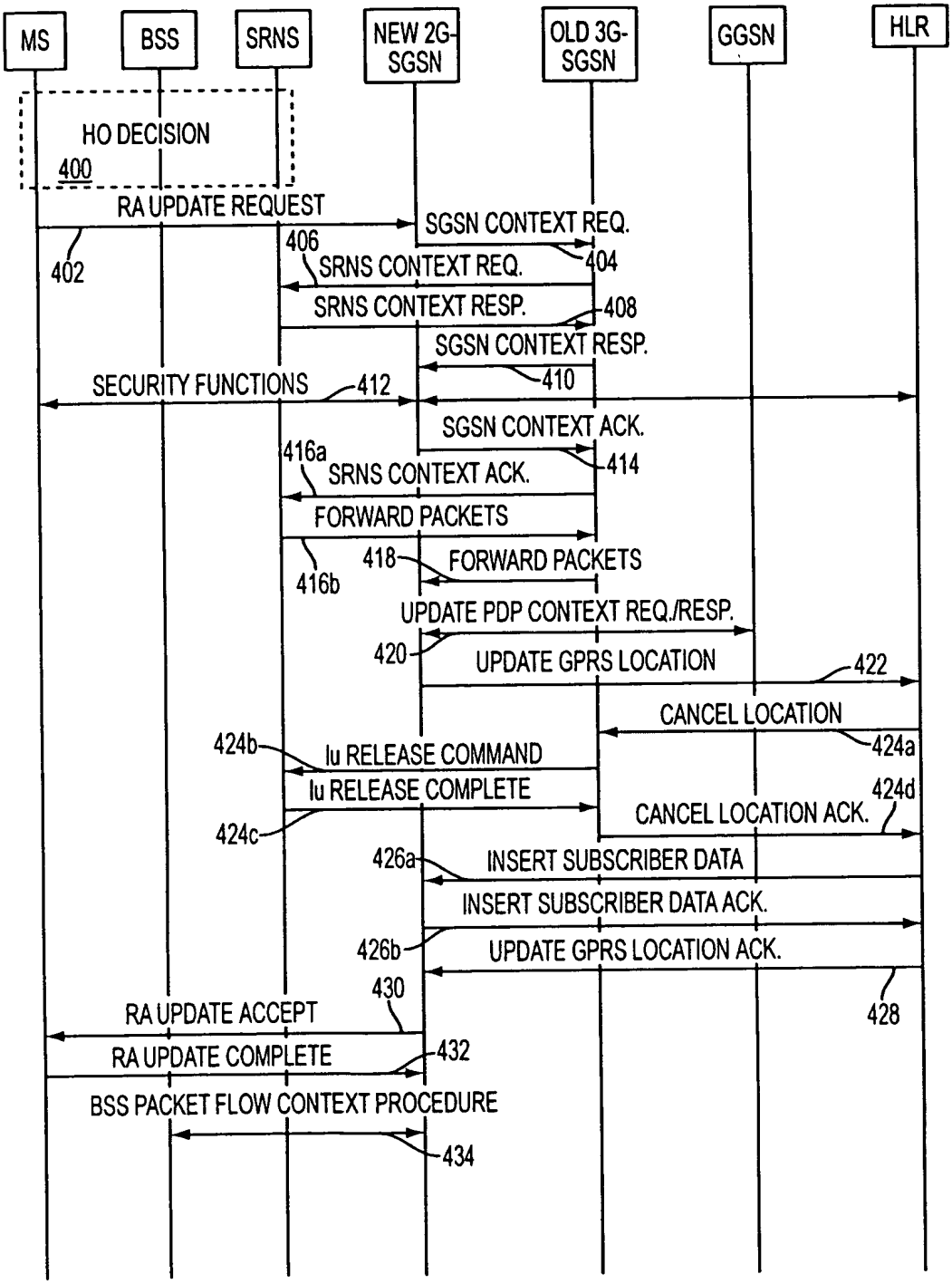
MS
BSS
SRNS
NEW 2G-SGSN
OLD 3G-SGSN
GGSN
HLR
HO DECISION
400
RA UPDATE REQUEST
402
SGSN CONTEXT REQ.
404
406
SRNS CONTEXT REQ.
SRNS CONTEXT RESP.
408
SGSN CONTEXT RESP.
410
SECURITY FUNCTIONS
412
SGSN CONTEXT ACK.
414
416a
SRNS CONTEXT ACK.
FORWARD PACKETS
416b
418
FORWARD PACKETS
UPDATE PDP CONTEXT REQ./RESP.
420
UPDATE GPRS LOCATION
422
CANCEL LOCATION
424a
424b
Iu RELEASE COMMAND
Iu RELEASE COMPLETE
424c
424d
CANCEL LOCATION ACK.
426a
INSERT SUBSCRIBER DATA
INSERT SUBSCRIBER DATA ACK.
426b
UPDATE GPRS LOCATION ACK.
428
430
RA UPDATE ACCEPT
RA UPDATE COMPLETE
432
BSS PACKET FLOW CONTEXT PROCEDURE
434

FIG. 4

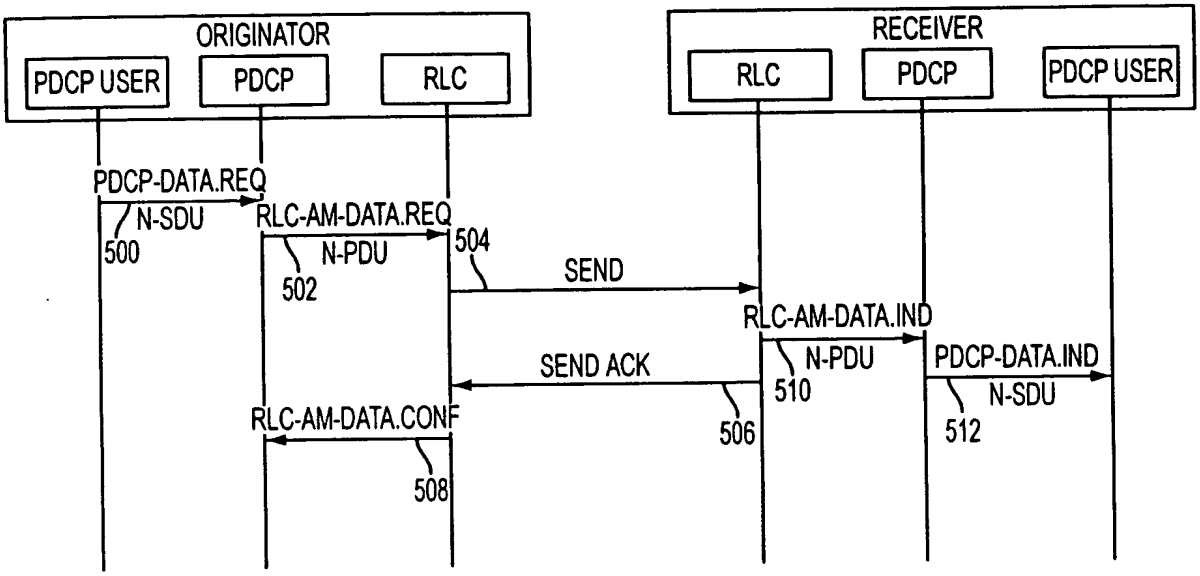
ORIGINATOR
PDCP USER
PDCP
RLC
RECEIVER
RLC
PDCP
PDCP USER
PDCP-DATA.REQ
N-SDU
500
RLC-AM-DATA.REQ
N-PDU
502
504
SEND
RLC-AM-DATA.IND
N-PDU
510
SEND ACK
506
PDCP-DATA.IND
N-SDU
512
RLC-AM-DATA.CONF
508

FIG. 5

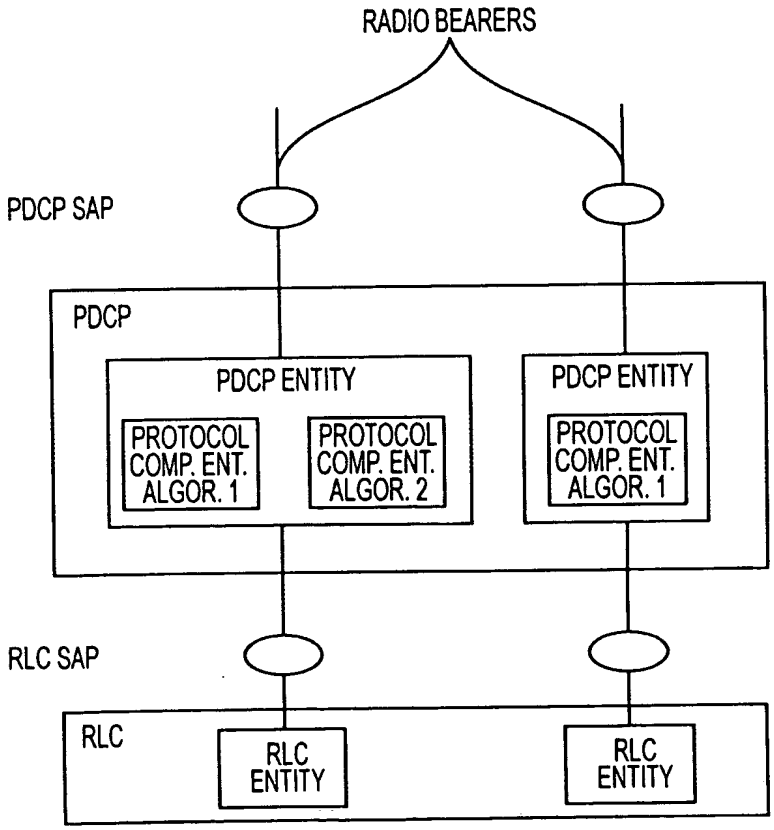
RADIO BEARERS
PDCP SAP
PDCP
PDCP ENTITY
PROTOCOL COMP. ENT. ALGOR. 1
PROTOCOL COMP. ENT. ALGOR. 2
PDCP ENTITY
PROTOCOL COMP. ENT. ALGOR. 1
RLC SAP
RLC
RLC ENTITY
RLC ENTITY

FIG. 6

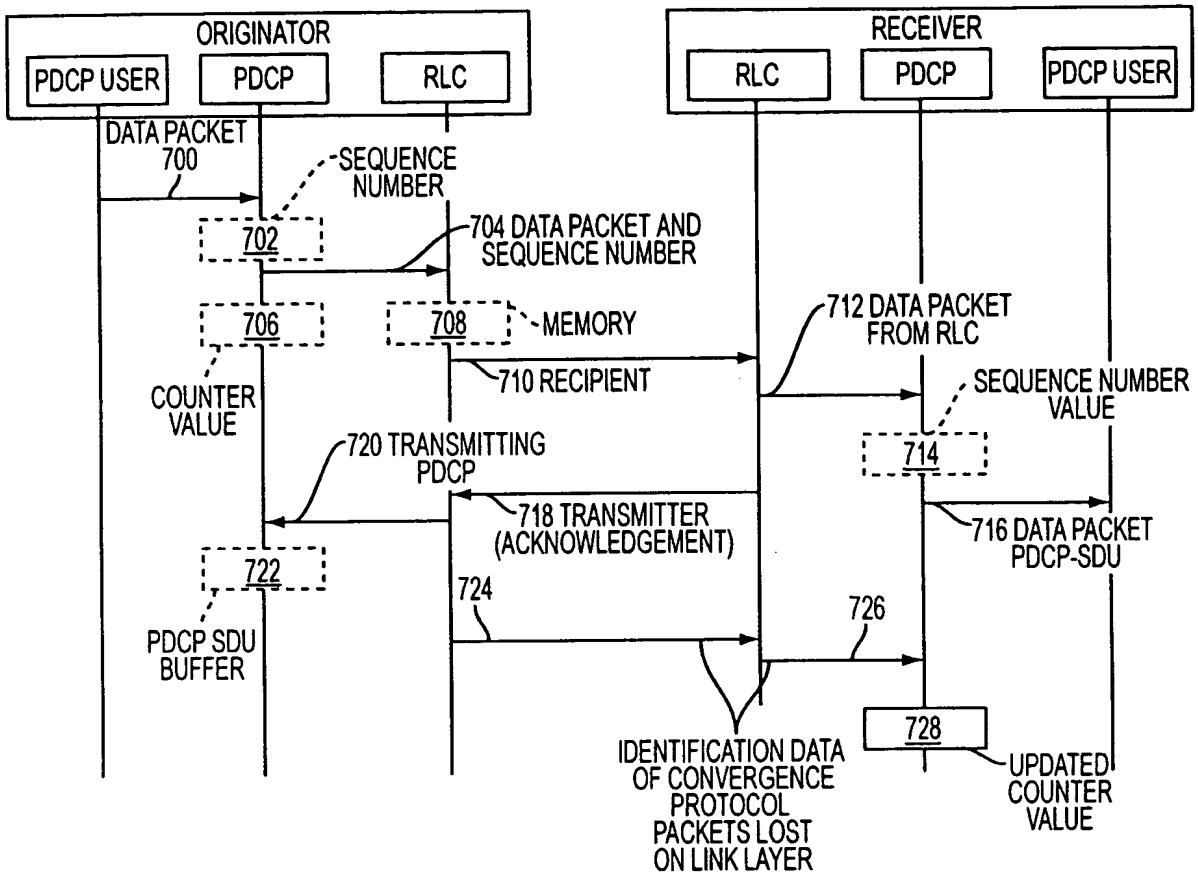

FIG. 7

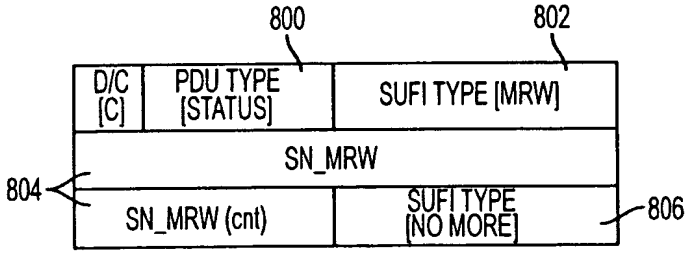

FIG. 8
PRIOR ART

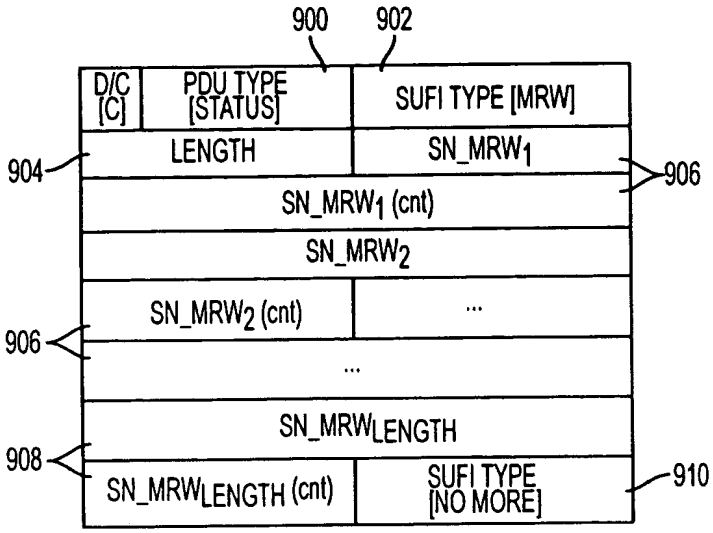
900
902
D/C [C]
PDU TYPE [STATUS]
SUFI TYPE [MRW]
LENGTH
SN_MRW1
904
906
SN_MRW1 (cnt)
SN_MRW2
SN_MRW2 (cnt)
...
906
...
SN_MRWLENGTH
908
SN_MRWLENGTH (cnt)
SUFI TYPE [NO MORE]
910

FIG. 9A

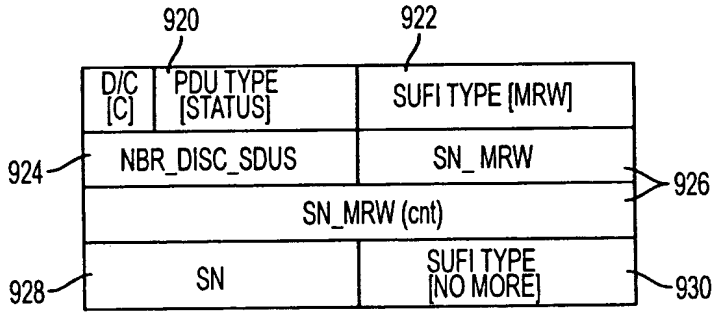
920
922
D/C [C]
PDU TYPE [STATUS]
SUFI TYPE [MRW]
NBR_DISC_SDUS
SN_ MRW
924
926
SN_MRW (cnt)
SN
SUFI TYPE [NO MORE]
928
930

FIG. 9B